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**Datasheet for the decision
of 6 July 2011**

Case Number: T 2387/09 - 3.2.06

Application Number: 00300317.5

Publication Number: 1022007

IPC: A61F 13/511

Language of the proceedings: EN

Title of invention:

Topsheet for disposable absorbent articles

Patentee:

UNI-CHARM CORPORATION

Opponent:

The Procter & Gamble Company

Headword:

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Relevant legal provisions:

EPC Art. 100(b), 83

Relevant legal provisions (EPC 1973):

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Keyword:

"Disclosure - sufficiency - no - no enabling disclosure
concerning how to obtain the claimed density range"

Decisions cited:

T 0575/05

Catchword:

-



Case Number: T 2387/09 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 6 July 2011

Appellant:
(Patent Proprietor)

UNI-CHARM CORPORATION
182 Shimobun
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Representative:

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Respondent:
(Opponent)

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 9 October 2009
revoking European patent No. 1022007 pursuant
to Article 101(2) EPC.

Composition of the Board:

Chairman: M. Harrison
Members: G. de Crignis
R. Menapace

Summary of Facts and Submissions

- I. European patent No. 1 022 007 was revoked by the opposition division by decision posted on 9 October 2009.
- II. Claim 1 as granted (corresponding to the main request in the present proceedings) has the following wording:

"An absorbent article (1) for disposal of body fluids comprising a liquid-pervious topsheet (2) defining a body facing surface, a liquid-impervious backsheet (3) defining an undergarment facing surface and a liquid-absorbent core (4) disposed between said topsheet and said backsheet, wherein:

said topsheet comprises an upper layer sheet (6) made of plastic film and a lower layer sheet (7) made of fibrous assembly;

said upper layer sheet (6) is 0.01 - 0.1mm thick and has a plurality of apertures (13) each having a diameter of 0.2 - 6mm and liquid-passages (14) extending from said apertures through said upper layer sheet each having a length of 0.2 - 4mm, a lower end diameter of 0.1 - 5mm and crests (11) and troughs (12) extending in a predetermined direction of said article and alternating in a direction intersecting said predetermined direction at right angles; and

said lower layer sheet (7) has a density of 0.01 - 0.1g/cm³ and a basis weight of 10 - 80g/m², and bonded to a bottom surface of said upper layer sheet (6) so that said liquid-passages extend from said upper layer sheet into said lower layer sheet."

- III. The decision of the opposition division was based on the finding that no indication was present in the patent in suit of how to form apertures while also forming crests and troughs as required by the subject-matter of claim 1 of any request. It followed that the invention was held not to be disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.
- IV. On 17 December 2009 the appellant (patent proprietor) filed an appeal against this decision and paid the appeal fee on the same day. A statement setting out the grounds of appeal was received at the European Patent Office on 18 February 2010, together with a main request to maintain the patent as granted, explanations as to how to provide the claimed structure of the topsheet and additionally two auxiliary requests as had already been submitted to the opposition division.
- V. With its communication of 12 April 2011 annexed to a summons to oral proceedings, the Board indicated *inter alia* that discussion appeared necessary regarding the objection raised by the respondent (opponent) concerning how a skilled person could arrive at a product having a lower topsheet layer within the stated density range without a method of measuring this thickness-dependent parameter having been described.
- VI. In its letter of 6 June 2011 in reply to the summons, the appellant filed a further auxiliary request.
- VII. Oral proceedings were held on 6 July 2011. The appellant requested that the decision under appeal be set aside and that the patent be maintained as

granted or on the basis of auxiliary request 1 or 2 filed on 19 February 2010 or auxiliary request 3 filed with letter of 6 June 2011.

The respondent requested dismissal of the appeal.

VIII. Claim 1 of the first auxiliary request comprises, in addition to the wording of claim 1 of the main request, the following features:
"wherein said upper layer sheet (6) is of hydrophobic nature and said liquid-passages (14) are treated to become hydrophilic".

Claim 1 of the second auxiliary request comprises, in addition to the wording of claim 1 of the main request, the following feature:
"wherein a bottom surface of said lower layer sheet (7) is bonded to an upper surface of said absorbent core (4)".

Claim 1 of the third auxiliary request comprises, in addition to the wording of claim 1 of the main request, the following feature:
"wherein the upper surface of the lower layer sheet has also said crests (11) and troughs (12)". Further it is specified that the lower layer sheet (7) is bonded to a bottom surface of said upper layer sheet (6) "by means of adhesive agent or sealing technique".

IX. The arguments of the appellant may be summarised as follows:

The skilled person knew how to determine the density of the lower layer sheet. The measurement of the thickness

would be determined in an uncompressed state of the lower layer sheet prior to its use in the absorbent article, e.g. by optical means.

When interpreting claim 1, only a flat lower layer sheet had to be considered since there was no disclosure in the patent in suit concerning how to provide the crests and troughs, nor any disclosure for which density should apply for the crests and troughs. This was clear in particular for the regions surrounding the apertures where a higher density than for the remaining regions applied. Hence, the claimed density could only concern the lower layer sheet before manufacturing the troughs, crests and apertures and thus before inserting it into the absorbent article. Indeed, the description only referred to the range of density of such a sheet.

It was not necessary to specify a method of measuring density since the skilled person could use any appropriate method. In view of the basis weight being defined, a density of the lower layer sheet lying in the claimed range could easily be obtained such that the skilled person knew how to obtain the claimed article.

- X. The arguments of the respondent may be summarised as follows:

The density of the lower layer sheet defined in claim 1 was not sufficiently disclosed in the specification such that an article containing such a sheet could be reliably reproduced by the skilled person. Additionally, no example was disclosed in the patent in suit of an

article falling within the claim. Although the density and basis weight ranges were disclosed, the density could only be arrived at if the thickness of the sheet were known.

Fibrous layers implicitly had a certain resiliency which necessitated the determination of the thickness under a specified pressure. The density of the lower layer sheet was a feature of the claimed absorbent article and an essential property of the lower layer; it influenced the absorbency and resiliency of the article. No method for its determination was disclosed. Hence, the patent in suit did not disclose the invention sufficiently clearly or completely for it to be carried out by a skilled person.

The subject-matter of claim 1 of all auxiliary requests included such feature and thus did not overcome the above objections.

Reasons for the Decision

1. The appeal is admissible.
2. Main Request - Sufficiency
 - 2.1 The patent in suit refers in paragraph [0013] to the lower layer sheet of the topsheet of the absorbent article and that it is provided in the form of a fibrous assembly. This fibrous assembly shall comprise synthetic or natural fibers intertwined or sealed together to have a density of $0.01 - 0.1 \text{ g/cm}^3$ and a basis weight of $10 - 80 \text{ g/m}^2$. Concerning the design of

the lower layer sheet, paragraph [0013] additionally points to its lower surface being preferably planar while it can also be similar to the upper surface which means it can have crests and troughs. Such a layer is compressible and implicitly has a certain resiliency which is specified via the disclosure that "upon removal of the body weight, the crests 11 and troughs 12 immediately restore their initial shapes." Figure 2 shows such crests and troughs provided on the upper surface of the lower layer sheet of fibrous material.

- 2.2 In the subject-matter of claim 1 ranges for the basis weight and the density of the lower layer sheet are defined and hence these ranges represent features of the claimed article which are of essential importance. It is not the lower layer prior to manufacturing of the article which is claimed to have such characteristics but the article wherein such lower layer is included.
- 2.3 Since density is equal to the surface weight/thickness, the determination of the density at any location is inevitably dependent on the thickness of the fibrous layer. Only in relation to the exact conditions applied concerning the pressure during the determination of the thickness can the density be reliably determined.
- 2.4 No method of measuring this parameter is disclosed in the patent in suit. Whilst it is correct that the skilled person has specific common general knowledge on this issue, this common general knowledge includes various standard methods concerning the determination of the thickness of a fibrous layer. These standard methods may for example include JIS, DIN, ISO or ASTM standard methods which however require the

specification of the pressure applied to the specimen to be specified at the time the thickness measurement is taken in order to obtain comparable results.

2.5 The appellant argued that the only logical interpretation of the density range defined in claim 1 was that it should be the average density range of the lower layer sheet before its connection to the other parts of the article, such as the core and upper layer sheet, to thereby form the article. The appellant's basis for this interpretation was the description in paragraph [0013] which noted, starting at line 28, that "such lower layer sheet 7 is bonded to ...", which was, in the appellant's view, a description of how the uncompressed layer was then used to form the absorbent article. According to the appellant, modern day high speed production techniques meant that a measurement of the layer thickness entering the machinery to produce the absorbent article could not be carried out using pressure, but only by optical means. Similarly, the appellant argued that the values of density given could not be those in the finished article, because the values of density were very low. Additionally, the appellant argued that even if the density were, contrary to its own understanding, to be understood as referring to the density range in the finished article, the absence of any test method would be an indication to a skilled person that an optical method should be used.

2.6 However, despite the density range disclosed in the description being the same as that in claim 1, it cannot be overlooked that claim 1 defines "an absorbent article" and defines features of that article, rather

than defining starting materials used to form the article. The article is also defined as having a core "disposed" between the topsheet and backsheet, whereby the lower layer sheet is notably defined as forming part of that topsheet. In this regard it should also be noted that the lower layer sheet is defined as "bonded" to a bottom surface of said upper layer sheet, thereby also clearly referring to the finished article. The appellant's reference to an average density cannot be found anywhere in the patent.

2.7 Additionally, it is not implausible that an uncompressed lower layer sheet with a density falling within the claimed range before assembly into the final article (if indeed this is what is meant in paragraph [0013]) would still possess such a density after having been processed into a sheet within the finished article. After all, the method of manufacturing the crests and troughs has not been stated, nor indeed any amount of compression which might be applied in doing so.

2.8 Thus, the appellant's further submission that an optical method would be used for sheet thickness measurement due to the way in which such articles were produced lacks any support. Not only does claim 1 not define the starting material's density range (it merely defines the finished article's density range (see above)), but no method of production has anyway been defined which would require optical measurement of thickness; even manual production is not excluded.

2.9 Additionally, the appellant's argument that the lack of any disclosure of a specific pressure during measurement would be understood as implying an optical

method of thickness measurement, is found unconvincing. The absence of any disclosure of criteria for measurement does not imply an optical method should be used, but merely that the information is lacking. The sheet being measured is a compressible fibrous sheet, which due to this compressibility (not least when being part of a finished article) is measured in this field of technology according to industrial standards requiring defined pressure levels in order to achieve the necessary precision and comparability.

2.10 The appellant also argued that any of the determination methods for the thickness/density could be applied, because the density and surface weight were both known, whereby the application of different determination methods would not prevent the skilled person from being able to carry out the invention. However, it follows from the foregoing analysis that without a specific method having been identified, the skilled person cannot arrive at the claimed article with any degree of reliability, since each method of determination with a different pressure will produce different results.

2.11 In support of lack of sufficient disclosure, the respondent had referred to a comparable case concerning the determination of thickness in a fibrous layer which was decided in T 575/05 wherein it is stated that "Summarising, a skilled person cannot know, from the disclosure in the patent, which measurement method should be employed to establish the claimed thickness parameter, nor which measurement conditions might be used for any chosen method."

2.12 The same applies in the present case with the consequence that the skilled person is unable to reliably establish what has to be done to achieve the claimed article, since in the absence of any disclosed method of determining the thickness of the lower layer sheet, the claimed parameter of density has no sufficiently defined technical meaning. Accordingly, the opposed patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. It follows, that the ground of opposition pursuant to Article 100(b) is indeed prejudicial to the patent as granted.

3. Auxiliary requests

3.1 Since neither the patent specification nor the patent application as originally filed includes the full information necessary for determining the density in question, the objections leading to the main request not being allowed apply equally to the auxiliary requests 1 to 3, as these all include in the subject-matter of claim 1 the feature concerning the range of the density of the lower layer sheet. Therefore, none of these requests meets the requirements of Article 83 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

M. Patin

M. Harrison